

REMARKS

This paper is submitted responsive to the official action mailed November 18, 2002. Reconsideration of the application in light of the accompanying remarks and amendments is respectfully requested.

In the aforesaid action, the Examiner indicated that claims 1-28 would be allowable if declaration problems were corrected, and that claims 34, 35 and 39-42 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and a proper declaration submitted.

By the present response, the claims have been amended so as to present the subject matter of claims 34 and/or 35 in independent claims 29, 30, 48 and 49, and the proper priority claim information forming the basis for the defective Declaration has been submitted in the form of an application data sheet. It is respectfully submitted that this response places the application in condition for allowance.

In connection with the Declaration, the Examiner indicated that the Declaration was defective for failure to mention the claim for foreign priority which was granted in the parent case. The attached Application Data Sheet contains the relevant information and is believed to comply

with 37 CFR 1.175 and MPEP 1414. Should a newly executed Declaration including the priority claim nevertheless be required, such a Declaration will be submitted.

Either the original patent, or a statement as to loss or inaccessibility of the original patent, will be submitted shortly so as to address this concern of the Examiner.

The Examiner also indicated that the preliminary amendment filed in this case did not comply with 37 CFR 1.173 and indicated that the amendment must be submitted in proper format. Attached hereto is a corrected version of the preliminary amendment which presents the new claims added therein entirely underlined as required. It is believed that this addresses the Examiner's concerns.

The claims as amended are believed to address the Examiner's concerns with respect to claims 36 and 37 under 35 USC 112, second paragraph, as well as claim 34 under 35 USC 112, first paragraph, and are believed to resolve the remaining issues raised by the Examiner in light of the indication of allowability.

Independent Claim 29 has been amended to include the subject matter of dependent claims 32 and 34, and independent claim 30 has been amended to include the allowable subject matter of dependent claims 32 and 35.

Independent claims 48 and 49 have been similarly amended, and thus, all independent claims now contain subject matter indicated by the Examiner to be allowable.

The dependency of claims 33, 36 and 37 has been amended so as to address antecedent basis issues for the second and third heat exchangers.

In connection with claim 43, it is noted that this subject matter is disclosed in the original patent in column 1, lines 45-58, and it is respectfully submitted that this claim is proper under 35 USC 112, first paragraph.

New dependent claims 50-52 are drawn to the subject matter of dependent claims 43-45, but depend from independent claim 30. Support for these claims is as in connection with claims 43-45.

Note also that amendments were made to claims 29 and 30 to correct inadvertent and obvious typographical errors. The missing word "of" has been added to line 6 of claim 29, and "enclosed" has been changed to "in closed" in line 12 of claim 30.

Dependent claims 32, 34-35 and 46-47 have been cancelled without prejudice as redundant with language added to the independent claims from which these claims depend.

The status of claims in this case as required by 37 CFR 1.173c is as follows:

Claims 1-28 pending

Claims 29-31 pending

Claim 32 cancelled

Claim 33 pending

Claims 34-35 cancelled

Claims 36-45 pending

Claims 46-47 cancelled

Claims 48-49 pending

New Claims 50-52 pending

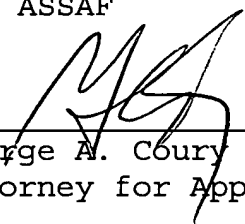
The changes made to claims amended herein are discussed above. Such changes involve either change in claim dependency, redrafting of claimed subject matter in independent form, or correction of obvious typographical errors, and support for these changes is submitted to be clear.

An earnest and thorough effort has been made to place this case in condition for allowance and to resolve all issues raised in the foregoing Official Action. If, upon consideration of this response, the Examiner believes that issues remain which can be addressed by telephone interview, the Examiner is courteously invited to telephone the undersigned in order to discuss and resolve same.

It is believed that no fee is due in connection with this response. If, however, any fee is due, please charge same to Deposit Account No. 02-0184.

Respectfully submitted,

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Date: July 23, 2003

I Janice T. Staton hereby certify that this correspondence is being deposited with the United States Postal Service on July 23, 2003 as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313.


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APPENDIX A

TECHNOLOGY CENTER R3700

29. (Amended). A heat pump system, comprising two units in fluid communication with each other, each unit including:

a housing, an air/brine heat exchanger, a brine/refrigerant heat exchanger, brine inlet means for applying brine onto at least one of said heat exchangers, a brine reservoir and means for circulating said brine from the reservoir to said inlet means;

said brine/refrigerant heat exchangers of said units being in closed loop fluid communication with each other and having compressor means for circulating a refrigerant therethrough in selected directions, and

means for circulating brine between said reservoirs,
wherein said means for circulating the brine between
said reservoirs are adapted to circulate brine at a lower
rate than the rate of circulation of the brine between said
reservoirs and said brine inlet means.

30. (Amended) A heat pump system, comprising:
two units in fluid communication with each other, each unit including:

a housing, brine inlet means at the top portion thereof, a first heat exchanger located adjacent said brine

inlet means, a brine reservoir at the lower part of said housing, and means for introducing air into brine-dripping space delimited between said first heat exchanger and said reservoir, and

a second heat exchanger in liquid communication with said brine inlet means and said reservoir;

said second heat exchangers being [enclosed] in closed loop fluid communication with each other and having compressor means for circulating a refrigerant therethrough in selected directions, and

means for circulating brine between said reservoir and said second heat exchanger of each unit,

and means for circulating brine between said reservoirs,

wherein said means for circulating the brine between said reservoirs are adapted to circulate brine at a lower rate than the rate of circulation of the brine between said reservoirs and said second heat exchanger of each unit.

Please cancel claim 32 without prejudice.

33. (Amended) The heat pump system as claimed in claim [31] 30, further comprising a third heat exchanger

affixed on brine circulating pipes, interconnecting said reservoirs.

Please cancel claim 34 without prejudice.

Please cancel claim 35 without prejudice.

36. (Amended) The heat pump system as claimed in claim [29] 33, wherein at least said unit and said second and third heat exchangers are made of materials non-corrosive to brine.

37. (Amended) The heat pump system as claimed in claim [29] 30, further comprising a throttle valve affixed to a refrigerant-carrying pipe interconnecting said second heat exchangers.

44. (Amended) The method as claimed in claim 43, wherein said [first] air/brine heat exchanger is thermally associated with said refrigerant evaporator.

45. (Amended) The method as claimed in claim 43, wherein said [first] air/brine heat exchanger is thermally associated with said refrigerant condenser.

Please cancel claim 46 without prejudice.

Please cancel claim 47 without prejudice.

48. (Amended) A dehumidifier system comprising:

a dehumidifying chamber into which moist air is introduced and from which less moist air is removed after dehumidification;

a desiccant solution situated in [at least one reservoir] two reservoirs;

a first conduit via which desiccant solution is transferred from [the at least one] a first reservoir of said two reservoirs to the dehumidifying chamber, said solution being returned to said [at least one] first reservoir after absorbing moisture from the moist air;

a regenerator which receives desiccant solution from [said at least one] a second reservoir of said two reservoirs and removes moisture from it;

a second conduit via which desiccant is transferred from [the at least one] said second reservoir to the regenerator, said solution being returned to said [at least one] second reservoir after moisture is removed from it;
[and]

a heat pump that transfers heat from the solution in the first conduit to the solution in the second conduit, and

means for circulating desiccant solution between said reservoirs,

wherein said means for circulating the desiccant between said reservoirs are adapted to circulate desiccant at a lower rate than the rate of transfer of said desiccant from said reservoirs to at least one of said dehumidifying chamber and said regenerator.

49. (Amended) A dehumidifier system comprising:

a dehumidifying chamber into which moist air is introduced and from which less moist air is removed after dehumidification;

a desiccant solution situated in a first reservoir;

a first conduit via which desiccant solution is transferred from the first reservoir to the dehumidifying chamber, said solution being returned to said [at least one] first reservoir after absorbing moisture from the moist air;

a desiccant solution situated in a second reservoir;

a regenerator which receives desiccant solution from the second reservoir and removes moisture from it;

a second conduit via which desiccant is transferred from the second reservoir to the regenerator, said solution being returned to said second reservoir after moisture is removed from it; and

means for circulating desiccant solution between said reservoirs,

wherein a substantial temperature differential is maintained between the first and second reservoirs, and

wherein said means for circulating the desiccant between said reservoirs are adapted to circulate desiccant at a lower rate than the rate of circulation of the desiccant between said reservoirs and at least one of said dehumidifying chamber and said regenerator.

Please add new claims 50-52 as follows:

50. A method for air conditioning, comprising:
providing a heat pump system as claimed in claim 30
and further including a refrigerant evaporator and a
refrigerant condenser, wherein the refrigerant evaporator
and the refrigerant condenser exchange heat with brine
solution, whereby the temperature of condensation of said
refrigerant is reduced while the temperature of said
evaporator is raised, thereby increasing the efficiency of
the system.

51. The method as claimed in claim 50, wherein said first heat exchanger is thermally associated with said refrigerant evaporator.

52. The method as claimed in claim 50, wherein said first heat exchanger is thermally associated with said refrigerant condenser.